

## Claims

1. A system for the layout-oriented recording of control-relevant information, having
  - 5 - first means (1) for graphically describing structures (22) which consist of individual (physical) components (21<sub>1..n</sub>),
  - second means (2) for graphically establishing at least one directed relationship (23) between the components (21<sub>1..j</sub>) of the described structures (22), and
  - 10 - third means (3) for specifying a control-relevant interconnection (24) of the components (21<sub>1..j</sub>) depending on the established relationships (23).
2. System according to Claim 1,
  - 15 c h a r a c t e r i z e d i n t h a t
  - the control-relevant information is provided for recording for an automation system of a process-engineering and/or production-engineering plant.
- 20 3. System according to Claim 1 or 2,
  - c h a r a c t e r i z e d i n t h a t
  - the components (21<sub>1..n</sub>) are developed in a library (25) as types having type-dependent properties and data interfaces (26).
- 25 4. System according to one of the preceding claims,
  - c h a r a c t e r i z e d i n t h a t
  - provision is made for the interconnection (24) of the components (21<sub>1..j</sub>) via the data interfaces (26).
- 30 5. System according to one of the preceding claims,
  - c h a r a c t e r i z e d i n t h a t
  - provision is made for the establishment of the directed relationships (23) between the components (21<sub>1..j</sub>) on the basis

of a material flow (27) in a process-engineering and/or production-engineering plant.

6. System according to Claim 5,

5 characterized in that provision is made for an information flow (28) between the components (21<sub>1..j</sub>) which runs counter to the material flow (27).

10 7. System according to one of Claims 1 to 4,

characterized in that provision is made for the establishment of the directed relationships (23) between data interfaces (26) of adjacent components (21<sub>1..j</sub>) on the basis of the distance of the  
15 components (21<sub>1..j</sub>) from each other and existing information about the data interfaces (26).

8. System according to one of the preceding claims,

characterized in that  
20 type information and/or entity information and/or location information (29) about the components (21<sub>1..j</sub>) is provided for use from the graphical layout.

9. System according to one of the preceding claims,

25 characterized in that fourth means (4) are provided for the layout-oriented adding of further properties (30) to components (21<sub>1..j</sub>).

10. System according to one of the preceding claims,

30 characterized in that provision is made for a layout-oriented combination of components (21<sub>1..i</sub>) into groups (31).

11. System according to Claim 10;  
c h a r a c t e r i z e d i n t h a t  
provision is made for a layout-oriented assignment of higher-  
order semantics (32) to the groups (31).

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12. System according to one of the preceding claims,  
c h a r a c t e r i z e d i n t h a t  
provision is made for an assignment of elements for delimiting  
permitted value ranges and/or attributes to components  $21_{1..j}$   
10 and/or functional groups 31 and/or data interfaces 26.

13. System according to one of the preceding claims,  
c h a r a c t e r i z e d i n t h a t  
provision is made for a layout-oriented generation of a network  
15 configuration (33) for the communication of the components  
( $21_{1..m}$ ) of a process-engineering and/or production-engineering  
plant.

14. Method for the layout-oriented recording of control-  
20 relevant information, in which

- structures (22) which consist of individual (physical)  
components ( $21_{1..n}$ ) are graphically described,
- at least one directed relationship (23) between the  
components ( $21_{1..j}$ ) of the described structures is  
25 graphically established, and
- a control-relevant interconnection (24) of the components  
( $21_{1..j}$ ) is specified depending on the established  
relationships (23).

30 15. Method according to Claim 14,  
c h a r a c t e r i z e d i n t h a t  
the control-relevant information is recorded for an automation  
system of a process-engineering and/or production-engineering

plant.

16. Method according to Claim 14 or 15,

characterized in that

5 the components (21<sub>1..j</sub>) are managed in a library (25) as types having type-dependent properties and data interfaces (26).

17. Method according to one of Claims 14 to 16,

characterized in that

10 the components (21<sub>1..j</sub>) are interconnected via the data interfaces (26).

18. Method according to one of the Claims 14 to 17,

characterized in that

15 the directed relationships (23) between the components (21<sub>1..j</sub>) are established on the basis of a material flow (27) in a process-engineering and/or production-engineering plant.

19. Method according to Claim 18,

20 characterized in that

an information flow (28) between the components (21<sub>1..j</sub>) runs counter to the material flow (27).

20. Method according to one of Claims 14 to 16,

25 characterized in that

the directed relationships (23) between data interfaces (26) of adjacent components (21<sub>1..j</sub>) are established on the basis of the distance of the components (21<sub>1..j</sub>) from each other and existing information about the data interfaces (26).

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21. Method according to one of Claims 14 to 20,

characterized in that

type information and/or entity information and/or location

information about the components  $(21_{1..j})$  from the graphical layout is used.

22. Method according to one of Claims 14 to 21,  
5 characterized in that  
further properties (30) are added to components  $(21_{1..j})$  in a layout-oriented manner.

23. Method according to one of the Claims 14 to 22,  
10 characterized in that  
components  $(21_{1..i})$  are combined into groups (31) in a layout-oriented manner.

24. Method according to Claim 23,  
15 characterized in that  
higher-order semantics (32) are assigned to the groups (31) in a layout-oriented manner.

25. Method according to one of Claims 14 to 24,  
20 characterized in that  
elements for delimiting permitted value ranges and/or attributes are assigned to components  $21_{1..j}$  and/or functional groups 31 and/or data interfaces 26.

25 26. Method according to one of Claims 14 to 25,  
characterized in that  
a network configuration (33) for the communication of the components  $(21_{1..m})$  of a process-engineering and/or production-engineering plant is generated in a layout-oriented manner.